



Emergency and Abnormal Situations: Scope of the Problem

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Emergency and Abnormal Situations: Scope of the Problem – A Proposal



**Emergency and Abnormal Situations:
Scope of the Symposium
OR
What I would like to learn from
all of you!**



Emergency and Abnormal Situations



Issues

- **Checklist and Procedure Structure and Design**
- Checklist and Procedure Use
- Human Performance Issues
- Training Issues
- Roles of Others During an Emergency or Abnormal Situation



ASRS Report – Accession Number 437817

Hydraulic caution light illuminated while taxiing....I..completed the QRH checklist...We rolled to a stop in the grass...A very poorly written QRH emergency checklist, I believe should be modified and improved.

CALLBACK: ...The checklist is for use in-flight, not on the ground...no changes to the checklist have been made in the 2 months since the incident occurred.



Emergency and Abnormal Situations



SECTION 3-1

ONE ENGINE INOPERATIVE LANDING

- Plan a flaps 15 landing
- Minimum VREF 15 + 5 on final approach

DESCENT - APPROACH

ANTI-ICE..... AS REQUIRED
 TCAS MODE SELECTOR T/A ONLY
 ENG START SWITCH (Operating ENG)..... ON
 ALTIMETER & INST SET & CHECKED
 *EPR & IAS BUGS.....CHECKED & SET, VREF 15

* **NOTE** If additional Go-Around thrust is desired
 accomplish the following below 10,000 ft:

ISOLATION VALVE.....CLOSE
 NO 1 ENG BLD AIR SW.....OFF
 APU BLD AIR SW ON

CAUTION Do not open the APU bleed valve if the ENG FIRE LIGHT remains illuminated:

NO 2 ENG BLEED AIR SW.....OFF
 (Add .03 to Go-Around EPR)

GROUND PROX.....INHIBIT
 FUEL.....BALANCE



Swissair 111

Based on a study of 15 in-flight fires that occurred between January 1967 and September 1998, the Transportation Safety Board of Canada determined that the average amount of time between the detection of an on-board fire and when the aircraft ditches, conducts a forced landing, or crashes is 17 minutes.

The Swissair 111 (MD-11) emergency checklist for “SMOKE/FIRE OF UNKNOWN ORIGIN” could take up to 30 minutes to execute.

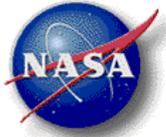


Emergency and Abnormal Situations



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ASRS Report – Accession Number 426768

During approach...the gear failed to come down...after notifying the tower we had a 'Gear Indication Problem'...

The QRH procedure...requires cycling the gear handle...after 4 or 5 attempts the landing gear came down...



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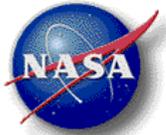


Emergency and Abnormal Situations



ASRS Report – Accession Number 472755

We did find communication difficult and use of oxygen masks, intercom, trying to talk to ATC was a handful. At night made it that much harder to read/accomplish checklist items. Turning cockpit lights on sooner would have helped.



ASRS Report – Accession Number 437830

The...events took place over a time span of less than 4 minutes during a critical phase of flight...the events occurred simultaneously with radio transmissions, configuration changes, airspeed changes and constantly changing altitude...

What we learned from this event is that running the emergency checklists may not be a classical situation where one has plenty of time for analysis and application of curative measures.



Emergency and Abnormal Situations



Issues

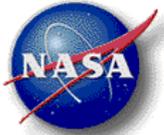
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ASRS Report – Accession Number 440922

During descent...the system #3 hydraulic low pressure annunciator illuminated...The pressure in system #3...went to zero...I called for the QRH for the loss of hydraulic pressure. While the Captain read the QRH procedure, he was having some difficulty identifying the exact nature of the failure as well as the proper corrective action.

While attempting to help the Captain with the QRH, I missed the 11000 ft crossing restriction...to prevent similar situations in the future, I feel that more time should be spent on QRH familiarization during training. The QRH [for this type of aircraft] is a bit confusing in places and actually contains mistakes.



ASRS Report – Accession Number 463186

Procedures and checklists worked well, but we did not don goggles (and ended up not needing them). The thing about goggles is they must be donned first – before the mask!

But procedures/training and habit all result in donning the mask first. Then if the goggles are required, the mask has to be removed. 'Smoke Procedures' should call for goggles first without analysis for need.



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ASRS Report – Accession Number 441860

While in a vectored holding pattern while we were performing a system 'A' hydraulic failure procedure (we had declared an emergency) ATC advised us of traffic from our right at 500 ft above us...visual contact was made close in...TCASII RA occurred to monitor descent...

We were then given 180 degree turn and as we rolled out, a second TCASII RA occurred 'Monitor Descent' and then indicated a climb...



ASRS Report – Accession Number 433902

We were told to execute a left 360 degree turn. We questioned this with the controller, but he said it was necessary for separation. We reluctantly complied since we did not have a need to land immediately. I felt that this was not acceptable, as we were an emergency.



Alaska Airlines Flight 261 Cockpit Voice Recording Transcript Excerpts

SEA-DIS: ...If uh you want to land at LA of course for safety reasons we will do that uh wu we'll uh tell you though that if we land in LA uh we'll be looking at probably an hour to an hour and a half we have a major flow program going right now uh that's for ATC back in San Francisco

CA: Well uh yu you eh huh... boy you put me in a spot here um...

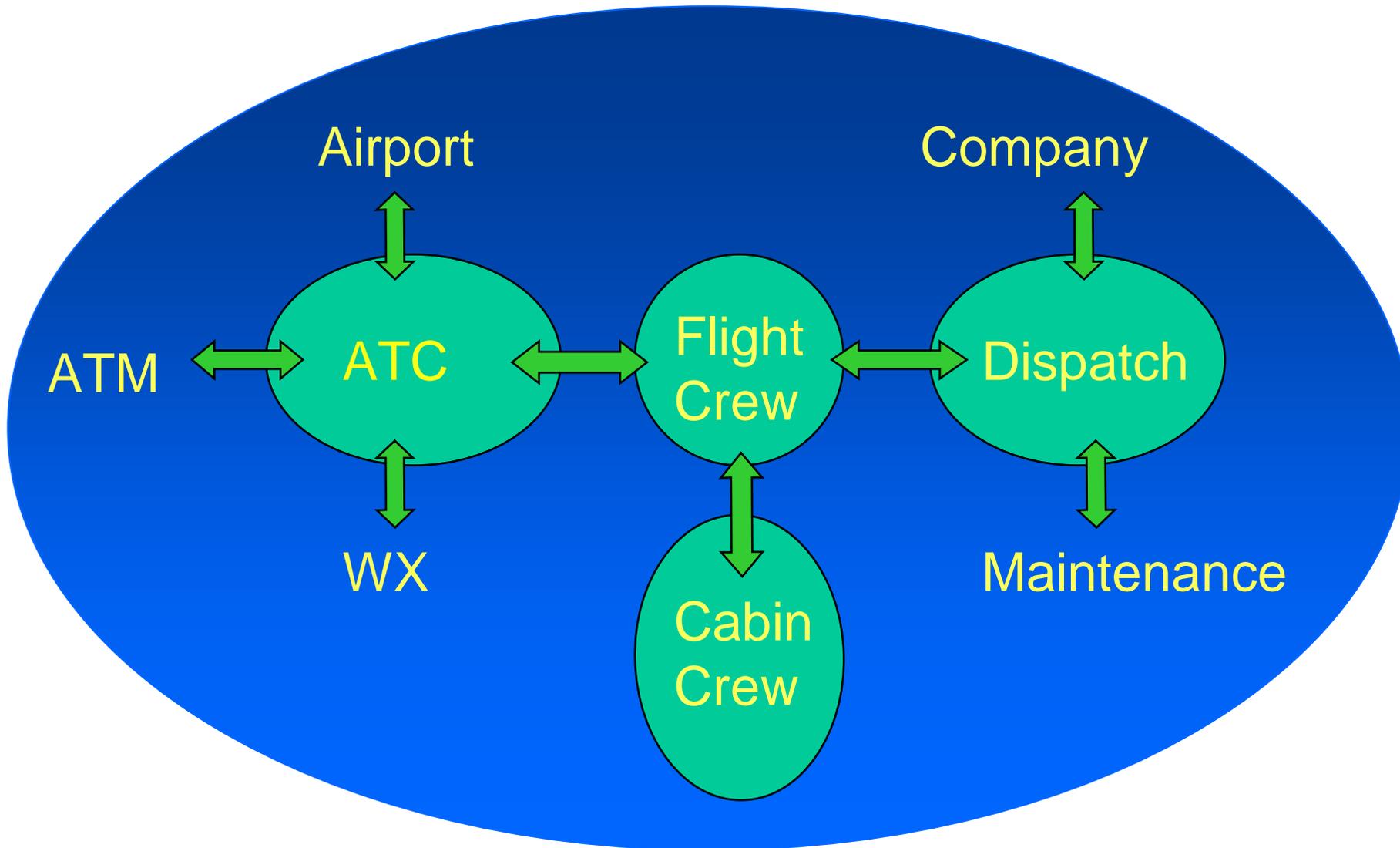
CA: I really didn't want to hear about the flow being the reason you're calling us cause I'm concerned about overflying suitable airports

SEA-DIS: Well we wanna do what's safe so if that's what you feel is uh safe we just wanna make sure you have all of the uh...all the info.

CA: Yea we we kinda assumed that we had... what's the uh the wind again there in San Francisco?



The Emergency Situation





Scope of the Problem

- Procedures – Development, Structure, Types, Presentation, Use
- Aircraft Systems and Automation
- Personnel and Crew Coordination Issues
- Cognitive and Affective Aspects of Non-Normal Situations
- Training Issues, Skill Acquisition, and Long Term Retention
- Roles of and Response by Others (Cabin Crew, ATC, Dispatch, Maintenance, ARFF, MedLink)